
Clearing network equipment faults

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Network equipment faults

Network equipment in the Meridian 1 provides speech path switching and transmits and receives signaling messages from the CPU. Network equipment can include:

- conference/tone and digit switch (CONF/TDS) card: provides conference capability, all tones for the system, and multifrequency sender (MFS) functionality
- intergroup switch (IGS) card: provides speech path switching between network groups for options 71, 81, and 81C
- network card: provides digital switching for the system

Note 1: The NT8D04 Superloop Network Card provides the equivalent of four network loops. The NT1P61 Fibre Superloop Network card and the NT7R51 Local Carrier Interface card provide the equivalent of two network loops.

Note 2: The NT8D18 Network/Digitone Receiver (DTR) Card provides the digital switching and MFS functionality, for options 21A, 21, and 21E.

- peripheral signaling (PS) card: provides the signaling interface to the CPU and clocking

Note: The NT8D19 Memory/Peripheral Signaling Card combines the functionality of memory and peripheral signaling cards, as well as miscellaneous CPU functions, for options 21A and 21. The NTND02 Misc/SDI/Peripheral Signaling Card combines the functionality of peripheral signaling and SDI cards, as well as miscellaneous CPU functions.

- serial data interface (SDI) card: provides the interface from the CPU to an input/output (I/O) device

Network equipment faults can cause system initializations and disable conference capability or all terminal connections (such as trunks and telephones) on a loop. Defective network equipment can make functional peripheral equipment seem faulty.

Fault clearing procedures

Manual continuity tests can be used to isolate superloop network card and IPE faults. For a description of manual continuity tests, see *Meridian 1 general maintenance information* (553-3001-500). See “LD 45” in the *X11 input/output guide* for details on performing the tests.

Table 10 lists common network equipment fault indications. To clear faults, select the symptom that most resembles the fault indications and go through the procedure for clearing each possible cause until the fault is fixed. Once the fault is corrected, disregard the remaining possible causes.

Note: Clear any power or common equipment faults before you try to clear network equipment faults.

If the fault is not cleared after you have gone through each possible cause, check the most recent fault indications. Also check [“Clearing network equipment faults” on page 93](#) to see if another type of fault is indicated.

After the fault is corrected, go to “Final maintenance procedure” on page 177 to completely restore normal operation.

WARNING

Module covers are *not* hinged; do *not* let go of the cover. Lift the cover away from the module and set it out of your work area.

Table 10
Network equipment fault indicators

Indicator	Possible indications
System messages	BSD081, 101, 110, 111, 121, 130, 201–203, 205–209, 600, 602 CNF messages DTA, DTC, DTI messages ERR020, 120, 4060 INI003, 007–012 NWS101, 141, 201–204, 301, 401 OVD021, 022, 023, 031 TDS messages XMI messages
Visual indicators	Minor alarm on an attendant console Red LEDs lit or flashing on cards
User reports	Minor alarm reported by attendant Users cannot transfer or conference Users cannot dial out on 500/2500 telephones No dial tone at all sets; no display on digital sets

Symptom:

Disabled loop indicated by OVD message (NT1P61 Fibre Superloop Network Card)

An overload (OVD) system message indicates that a loop on an NT1P61 Fibre Superloop Network Card is disabled. All terminal connections on the loop are disabled. A red LED on the card may be lit or flashing. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Manual continuity tests can be used to isolate superloop network card and IPE faults. See “LD 45” in the *X11 input/output guide* for details on performing the tests.

Note: Continually observe and look up system messages as you perform this procedure.

Replace equipment as described in *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- Fibre Peripheral Controller card: NT1P62
- Fibre Superloop network card: NT1P61
- IPE card
- Cable between superloop network card and controller card

Possible cause	Action
Defective superloop network card	Hardware disable, then reenable, the superloop network card to initiate a self-test or executing the XNTT loop command. If the test fails, check the card status. Check the status of the Fibre Superloop Network card: LD 30 STAT loop “loop” represents the loop number. Check the display and take steps to resolve the problem indicated in the status report.

(continued)

Possible cause	Action
	If you receive an OVD message, replace the superloop network card. If the card is disabled, enable it by executing the ENLL loop command. If the response is UNEQ, install the card correctly and observe self-test.
Defective controller card	Perform the Fibre Peripheral Controller card self-test: DSXP x "x" represents the controller number. If the test passed, enable the card by executing: ENXP x "x" represents the controller number. If the test failed, check the maintenance display codes on the controller card and wait for an OVD message. In the OVD message is received, replace the card. If there is no OVD message, go to the next possible cause.
Defective PE card	Reinsert the PE cards one at a time. Wait for an OVD message after each card is inserted. If the red LED lights when a card is inserted, software disable the card, then try to reenabling it. If it will not enable, replace the card. If you receive an OVD message when one of the PE cards is inserted, replace that card. If there is no OVD message as you insert the cards, go to the next possible cause.
Defective fibre-optic span	To check the fibre-optic span, perform loopback test across the span. Load LD 45 and execute the XCON 6 test with Fibre Superloop Network card as the generator and detector with span looped at the Fibre Peripheral Controller card at the Fibre Remote IPE. Check the test results and proceed accordingly.
Defective terminal equipment	Check terminal equipment (such as attendant consoles and telephones) on the disabled loop. If you find defective terminal equipment, see the appropriate chapter (such as "Clearing attendant console faults" on page 145) to fix the fault.

Symptom:**Disabled loop indicated by OVD message
(NT7R51 Local Carrier Interface Card)**

An overload (OVD) system message indicates that a loop on an NT7R51 Local Carrier Interface Card is disabled. All terminal connections on the loop are disabled. A red LED on the card may be lit or flashing. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Manual continuity tests can be used to isolate superloop network card and IPE faults. See “LD 45” in the *X11 input/output guide* for details on performing the tests.

Note: Continually observe and look up system messages as you perform this procedure.

Replace equipment as described in *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- Remote Carrier Interface card: NT7R52
- Local Carrier Interface card: NT7R51
- IPE card
- Cable between superloop network card and controller card

Possible cause	Action
Defective Local Carrier Interface card	Hardware disable, then reenable, the superloop network card to initiate a self-test. If the test fails, replace the card. If the test passes, follow the procedure below. Check the status of the Local Carrier Interface card: LD 32 STAT sl “sl” represents the loop number. Check the display and take steps to resolve the problem indicated in the status report.

(continued)

Possible cause	Action
	If you receive an OVD message, replace the superloop network card. If the card is disabled, enable it by executing the ENLL sl command. If the response is UNEQ, install the card correctly and observe self-test.
Defective Remote Carrier Interface card	Unseat all cards on the PE shelf except the Remote Carrier Interface card. Unseat and seat the Remote Carrier Interface card to start self-test. Observe self-test: If the test passed, enable the card by executing: ENXP x “x” represents the controller number. If the test failed, check the maintenance display codes on the card faceplate and wait for an OVD message. In the OVD message is received, replace the card. If there is no OVD message, go to the next possible cause.
Defective PE card	Reinsert the PE cards one at a time. Wait for an OVD message after each card is inserted. If the red LED lights when a card is inserted, software disable the card, then try to reenale it. If it will not enable, replace the card. If you receive an OVD message when one of the PE cards is inserted, replace that card. If there is no OVD message as you insert the cards, go to the next possible cause.
Defective cable	To check the carrier span, perform loopback test across the span. Load LD 45 and execute the XCON 6 test with Local Carrier Interface card as the generator and detector with span looped at the Remote Carrier Interface card at the Carrier Remote IPE. Check the test results and proceed accordingly. If there is no OVD message, go to the next possible cause.
Defective terminal equipment	Check terminal equipment (such as attendant consoles and telephones) on the disabled loop. If you find defective terminal equipment, see the appropriate chapter (such as “Clearing attendant console faults” on page 145) to fix the fault.

Symptom:**Disabled loop indicated by OVD message
(NT8D04 Superloop Network Card)**

An overload (OVD) system message indicates that a loop on an NT8D04 Superloop Network Card is disabled. All terminal connections on the loop are disabled. A red LED on the card may be lit or flashing. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Manual continuity tests can be used to isolate superloop network card and IPE faults. See “LD 45” in the *X11 input/output guide* for details on performing the tests.

Note: Continually observe and look up system messages as you perform this procedure.

Replace equipment as described in *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- Controller card: NT8D01
- Superloop network card: NT8D04
- IPE card
- Cable between superloop network card and controller card

Possible cause	Action
Defective superloop network card	Hardware disable, then reenable, the superloop network card to initiate a self-test. If the test fails, replace the card. If the test passes, follow the procedure below. Disconnect the loop cable(s) to the superloop network card. Enable and test each loop on the card by entering: LD 32 ENLL loop “loop” represents the loop number. Wait for an OVD message.

(continued)

Possible cause	Action
	If you receive an OVD message, replace the superloop network card. If there is no OVD message, go to the next possible cause.
Defective controller card	Unseat all cards on the PE shelf except the controller card. Reconnect the loop cable to the controller card and enable the card by entering: ENXP x "x" represents the controller number. Note: If more than one shelf is involved, follow this and subsequent procedures one at a time for each controller card. Check the maintenance display codes on the controller card and wait for an OVD message. If you receive an OVD message, unseat and reinstall the controller card to initiate a self-test. If the test fails, replace the card and reinsert cards on the PE shelf. If there is no OVD message, go to the next possible cause.
Defective PE card	Reinsert the PE cards one at a time. Wait for an OVD message after each card is inserted. If the red LED lights when a card is inserted, software disable the card, then try to reenable it. If it will not enable, replace the card. If you receive an OVD message when one of the PE cards is inserted, replace that card. If there is no OVD message as you insert the cards, go to the next possible cause.
Defective cable	Disconnect the loop cable at the controller card. (If there is more than one loop cables, disconnect them one at a time and follow the procedure below for each cable.) Reconnect the cable(s) to the superloop network card and wait for an OVD message. If you receive an OVD message, replace the cable. If there is no OVD message, go to the next possible cause.
Defective terminal equipment	Check terminal equipment (such as attendant consoles and telephones) on the disabled loop. If you find defective terminal equipment, see the appropriate chapter (such as "Clearing attendant console faults" on page 145) to fix the fault.

Symptom:

Loop disabled without OVD message (NT8D04 Superloop Network Card)

There is probably a system message indicating the loop or loops on this card are defective or disabled, but there is no overload (OVD) message indicating the card is disabled. The LED on the faceplate may be lit or flashing. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Manual continuity tests can be used to isolate superloop network card and IPE faults. See “LD 45” in the *X11 input/output guide* for details on performing the tests.

Note: Continually observe and look up system messages as you perform this procedure.

Replace equipment as described in *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- Controller card: NT8D01
- Superloop network card: NT8D04
- IPE card
- Cable between superloop network card and controller card

Possible cause	Action
Defective superloop network card	Hardware disable, then reenable, the superloop network card to initiate a self-test. If the test fails, replace the card. If the test passes, follow the procedure below. Disconnect the loop cable(s) to the superloop network card. Try to enable each loop on the card by entering: LD 30 ENLL loop “loop” represents the loop number. Test each loop by entering: LOOP loop

(continued)

Possible cause	Action
	If you receive an OVD message at this point, replace the superloop network card. If there is no OVD message and the loops will not enable, go to the next possible cause.
Defective controller card	Unseat all cards on the PE shelf except the controller card. Reconnect the loop cable to the controller card and enable the controller card by entering: LD 32 ENXP x "x" represents the controller number. Note: If more than one shelf is involved, follow this and subsequent procedures one at a time for each controller card. Check the maintenance display codes on the controller card. If you receive an OVD message at this point, unseat and reinstall the controller card to initiate a self-test. If the test fails, replace the card. Reinsert cards on the PE shelf. If there is no OVD message and the loops will not enable, go to the next possible cause.
Defective PE card	Reinsert the PE cards one at a time. If the red LED lights when a card is inserted, software disable the card, then try to reenable it. If it will not enable, replace the card. If you receive an OVD message when one of the PE cards is inserted, replace that card. If no LEDs light and there is no OVD message as you reinsert the cards, go to the next possible cause.
Defective cable	Disconnect the loop cable at the controller card. (If there is more than one cable, disconnect them one at a time and follow the procedure below for each cable.) Reconnect the cable(s) to the superloop network card. If you receive an OVD message at this point replace the cable. If there is no OVD message and the loops will not enable, go to the next possible cause.
Defective terminal equipment	Check terminal equipment (such as attendant consoles and telephones) on the disabled loop. If you find defective terminal equipment, see the appropriate chapter (such as "Clearing attendant console faults" on page 145) to fix the fault.

Symptom:

Disabled loop indicated by OVD message (QPC414 Network Card)

An overload (OVD) system message indicates that a loop on a QPC414 Network Card is disabled. All terminal connections on the loop are disabled. A red LED on the card may be lit. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

For information on switch settings, see *Circuit card installation and testing* (553-3001-211). Replace equipment as described in *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- Dual loop peripheral buffer (DLB) card: QPC659
- NT5K10 DLB card used in the NT5K11 EEPE module
- Network card: QPC414
- PE card
- Cable between network card and DLB card

Possible cause	Action
Defective network card	Disconnect the loop cable(s) to the network card. Enable and test each loop on the network card by entering: LD 30 ENLL loop “loop” represents the loop number. Test each loop by entering: LOOP loop Wait for an OVD message. If you receive an OVD message, replace the network card. If there is no OVD message, go to the next possible cause.

(continued)

Possible cause	Action
Defective DLB card	Unseat all cards on the PE shelf except the DLB card (if there are two shelves on the loop, disconnect the cable to connector LPY): — Reconnect the loop cable to the DLB card. — If you receive an OVD message, replace the DLB card and reinsert cards on the PE shelf. If there is no OVD message: — Check switch settings on the DLB card; if necessary, correct the switch settings. — If there are two shelves on the loop, go to the next possible cause. — If there is one shelf on the loop, go to “Disabled peripheral equipment card” on page 130
Defective DLB card on second shelf (if two shelves are on the loop)	Unseat all cards on the second shelf except the DLB card. Reconnect the inter-shelf cable to the DLB card and wait for an OVD message. If there is an OVD message, replace the DLB card and reinsert cards on the PE shelf. If there is no OVD message, go to the next possible cause.
Defective NT5K10 DLB card	In Dual Loop Mode — Unseat 4 PE cards pertaining to the defective loop or In Single Loop Mode — Unseat 8 PE cards pertaining to the defective loop. Wait for the OVD message. If there is no OVD message, go to the defective PE card. If you receive an OVD message, remove the backplane access plate at the back of the EEPE shelf and replace the Dual Loop Peripheral Buffer Card. Reinsert the PE cards on the shelf. Replace the backplane access plate.

(continued)

Possible cause	Action
Defective PE card	Reinsert the PE cards one at a time. (If there are two shelves on the loop, follow this and subsequent procedures one at a time for each shelf.) Wait for an OVD message after each card is inserted. If the LED lights when a card is inserted, software disable the card, then try to reenable it. If it will not enable, replace the card. If you receive an OVD message when one of the PE cards is inserted, replace that card. If there is no OVD message as you reinsert the cards, go to the next possible cause.
Defective cable between network and DLB cards	For the EEPE shelf only: remove the backplane access plate at the back of the module. Disconnect the loop cable at the DLB card. Reconnect the cable(s) to the network card and wait for an OVD message. If you receive an OVD message, replace the cable. If there is no OVD message, go to the next possible cause. For the EEPE shelf only: replace the backplane access plate.
Defective cable between shelves (if two shelves are on the loop)	Disconnect the inter-shelf cable to connector LPX on the second shelf DLB card. Reconnect the cable to connector LPY on the first shelf DLB card and wait for an OVD message. If you receive an OVD message, replace the inter-shelf cable. Reinsert cards on the PE shelf. If there is no OVD message, go to the next possible cause.
Defective terminal equipment	Check terminal equipment (such as attendant consoles and telephones) on the disabled loop. If you find defective terminal equipment, see the appropriate chapter (such as "Clearing attendant console faults" on page 145) to fix the fault.

Symptom:
Loop disabled without OVD message
(QPC414 Network Card)

There is probably a system message indicating that the loop or loops on this card are defective or disabled, but there is no overload (OVD) message indicating the card is disabled. The LED on the faceplate may be lit. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

For information on switch settings, see *Circuit card installation and testing* (553-3001-211). Replace equipment as described in *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- Dual loop peripheral buffer (DLB) card: QPC659
- NT5K10 DLB card used in the NT5K11 EEPE module
- Network card: QPC414
- PE card
- Cable between network card and DLB card

Possible cause	Action
Defective network card	Test the loops on the card by entering: LD 30 LOOP loop “loop” represents the loop number. Try to enable the loops by entering: ENLL loop Wait for an OVD message. If you receive an OVD message at this point, replace the network card. If there is no OVD message and the loops will not enable, go to the next possible cause.

(continued)

Possible cause	Action
Defective DLB card	Unseat all cards on the PE shelf except the DLB card (if there are two shelves on the loop, disconnect the cable to connector LPY): — Reconnect the loop cable to the DLB card. — If you receive an OVD message at this point, replace the peripheral buffer card and reinsert cards on the PE shelf. If there is no OVD message and the loops will not enable: — Check switch settings on the DLB card; if necessary, correct the switch settings. — If there are two shelves on the loop, go to the next possible cause. — If there is one shelf on the loop, go to “Disabled peripheral equipment card” on page 130.
Defective QPC659 DLB card on second shelf (if two shelves are on the loop)	Unseat all cards on the second shelf except the DLB card. Reconnect the inter-shelf cable to the DLB card. If you receive an OVD message at this point, replace the DLB card and reinsert cards on the PE shelf. If there is no OVD message and the loops will not enable, go to the next possible cause.
Defective NT5K10 Peripheral Buffer Card	In Dual Loop Mode — Unseat 4 PE cards pertaining to the defective loop or In Single Loop Mode — Unseat 8 PE cards pertaining to the defective loop. Wait for the OVD message. If there is no OVD message, go to the defective PE card. If you receive an OVD message, remove the backplane access plate at the back of the EEPE shelf and replace the Dual Loop Peripheral Buffer Card. Reinsert the PE cards on the shelf. Replace the backplane access plate.

(continued)

Possible cause	Action
Defective PE card	Reinsert the PE cards one at a time. (If there are two shelves on the loop, follow this and subsequent procedures one at a time for each shelf.) If the LED lights when a card is inserted, software disable the card, then try to reenable it. If it will not enable, replace the card. If you receive an OVD message when one of the PE cards is inserted, replace that card. If no LEDs light and there is no OVD message as you reinsert the cards, go to the next possible cause.
Defective cable between network and DLB cards	For EEPE shelf only: remove the backplane access plate at the rear of the module. Disconnect the loop cable at the DLB card. Reconnect the cable(s) to the network card. If you receive an OVD message at this point, replace the cable. If there is no OVD message and the loops will not enable, go to the next possible cause. For EEPE shelf only: remove the backplane access plate at the rear of the module.
Defective cable between shelves (if two shelves on the loop)	Disconnect the inter-shelf cable to connector LPX on the second shelf DLB card. Reconnect the cable to connector LPY on the first shelf DLB card. If you receive an OVD message at this point, replace the inter-shelf cable. Reinsert cards on the PE shelf. If there is no OVD message and the loops will not enable, go to the next possible cause.
Defective terminal equipment	Check terminal equipment (such as attendant consoles and telephones) on the disabled loop. If you find defective terminal equipment, see the appropriate chapter (such as "Clearing attendant console faults" on page 145) to fix the fault.

Symptom:

Disabled peripheral signaling card indicated by OVD message

There is an overload (OVD) system message indicating that a peripheral signaling card is disabled. The LED on the faceplate may be lit. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

Replace equipment as described in *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- Superloop network card or network card: NT8D04, QPC414
- PS card: QPC43
- Clock controller: QPC471, QPC775
- D-channel handler interface card: QPC757

Possible cause	Action
Defective PS card	Unseat all network cards associated with the PS card. Enable the PS card by entering: LD 32 ENPS x “x” represents the PS card number. Wait for an OVD message. If you receive an OVD message, replace the PS card. If there is no OVD message, go to the next possible cause. (continued)

Possible cause	Action
Defective network card	Reinsert network cards one at a time. Wait for an OVD message after each card is inserted. If you receive an OVD message when one of the cards is inserted, replace that card. Reenable the PS card by entering: LD 32 ENPS x If you do not receive an OVD message, go to the next possible cause.
Defective clock controller	See <i>Digital Trunk Interface/Computer-to-PBX Interface maintenance</i> (553-2811-500)

Symptom:**Peripheral signaling card disabled without OVD message**

The peripheral signaling card is disabled on one shelf. The LED on its faceplate may be lit. There is no overload (OVD) message indicating a fault with this card. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

Replace equipment as described in *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- Superloop network card or network card: NT8D04, QPC414
- PS card: QPC43
- Clock controller: QPC471, QPC775
- D-channel handler interface card: QPC757

Possible cause	Action
Defective PS card	Unseat all network cards associated with the PS card. Try to enable the PS card by entering: LD 32 ENPS x “x” represents the PS card number. If you receive an OVD message at this point or you cannot enable the PS card, replace it. If the PS card is still disabled, go to the next possible cause. (continued)

Possible cause	Action
Defective network card	Reinsert network cards one at a time. If you receive an OVD message when one of the cards is inserted or if the card is disabled, replace that card. Reenable the PS card by entering: LD 32 ENPS x If the PS card is still disabled, go to the next possible cause.
Defective clock controller	See <i>Digital Trunk Interface/Computer-to-PBX Interface maintenance</i> (553-2811-500)

Symptom:**Problems with transferring, placing conference calls, or Music-on-Hold**

Several users cannot transfer or place conference calls, or calls do not receive Music-on-Hold. A card that provides conference capability may be disabled. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

Replace equipment as described in *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- Conference/TDS card: NT8D17
- PS card: QPC43
- 3PE card: QPC441
- Telephone keys

Possible cause	Action
Defective conference/TDS card	If there are no messages indicating a fault on any conference loop, test each conference loop in the system by entering: LD 38 CNFC loop “loop” represents the conference loop number. Note: See the <i>X11 input/output guide</i> for other tests. If the conference loop is disabled, try to enable it by entering: LD 38 ENLX loop “loop” represents the Conference loop, which is the odd loop of the Conference/TDS loop pair. Note: You must enable the card with the command ENLX. Enabling the loops with the command ENLL does not enable the hardware.

(continued)

Possible cause	Action
	If a fault is indicated on a conference loop, replace the conference/TDS card identified. If no faults are detected on any conference loop, go to the next possible cause.
Defective card on Network shelf	One at a time, replace the following cards until the fault clears: — 3PE card — PS card If there is still a Conference problem, go to the next possible cause.
Defective telephone keys	Check the keys on any telephone with this problem. See the following Northern Telecom Publications: — <i>X11 input/output guide</i>—LD31 tests — <i>Telephone and attendant console installation</i> (553-3001-215) — <i>Meridian 1 telephones description and specifications</i> (553-3001-108)
Excessive traffic in the system	Additional conference/TDS cards may be required to handle the traffic in the system. See <i>Traffic measurement formats and output</i> (553-2001-450).

Symptom:

Problems placing calls on 2500 telephones and some trunks

Several users of 2500 telephones report trouble placing calls. Other users may report trouble dialing on certain trunks. A digitone receiver or a card that provides tone and digit switch capability may be disabled. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

Replace equipment as described in *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- Tone Detector Card: NT5K20, NT5K48
- Conference/TDS card: NT8D17
- DTR card: NT8D16
- Network/DTR card: NT8D18

Possible cause	Action
Defective digitone receiver	Check for disabled digitone receiver TNs by entering: LD 34 STAT If any are disabled, try to enable them by entering: ENLR l s c u "l s c u" represents loop, shelf, card, and unit numbers. Test the digitone receiver by entering: DTR l s c u If the digitone receiver fails the test, replace it. If the digitone receiver passes the test, go to the next possible cause.

(continued)

Possible cause	Action
Defective conference/TDS card	Test Tone and Digit Switch loops by entering: LD 34 TDS loop "loop" represents the loop number. If the conference loop is disabled, try to enable it by entering: ENLX loop "loop" represents the TDS/MFS loop, which is the even loop of the Conference/TDS loop pair). Note: You must enable the card with the command ENLX. Enabling the loops with the command ENLL does not enable the hardware. If a fault is indicated on a conference loop, replace the conference/TDS card identified. If no faults are detected on any conference loop, go to the next possible cause.
Excessive traffic in the system	Additional digitone receivers or conference/TDS cards may be required to handle the traffic in the system. See <i>Traffic measurement formats and output</i> (553-2001-450).
